

REMARKS

Drawings

The Examiner has objected to Figure 1. In response, a replacement sheet is enclosed.

Status of the Claims

Applicants have made a voluntary amendment limiting the “network” referred to in the claims to an optical network. This amendment is not made in view of any of the references cited by the Examiner. This amendment is made without prejudice.

Claim Rejections

The claims have been rejected as anticipated by, or as obvious over, the reference by Baworntummarat et al. Applicants respectfully traverse this rejection and beg for reconsideration on the ground that Applicants made the invention prior to the effective date of the cited reference.

Priority

The Baworntummarat reference is dated October 22-25, 2000. However, as explained in the enclosed Declaration Under 37 CFR 131, Applicants had already actually reduced their invention to practice prior to October 1, 2000.

More specifically, Applicants prior to October 2000 developed in the United States algorithms for designing survivable all-optical core networks with DWDM hardware. In particular, they developed three design architectures based, respectively, on routing with dedicated protection, routing on logical rings with shared protection, and routing on meshes with restoration.

In a dedicated protection architecture, two distinct node pairs are prohibited from sharing the same protection wavelength on the same optical fiber, whereas such sharing is permitted in a shared protection architecture.

In the architecture for routing on meshes with restoration, so-called “active” paths are constructed that carry the demands for all node pairs, and additional numbers of

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Amendments to the Drawings:

In response to the Examiner's objection to Figure 1, a replacement sheet is attached.

Attachment: Replacement Sheet

wavelengths are set aside for restoration of paths that are affected by failures. In all three architectures, a cost function is optimized.

Prior to October 2000, Applicants tested their algorithms in a series of simulations. The inputs to the simulations included information specifying the numbers and relative locations of nodes of a hypothetical network, the distances between the nodes, hardware and cable costs associated with nodes and links, and hypothetical demand matrices for the hypothetical network. These inputs represented a simulated, and not a real-life, situation. Nevertheless, the results of the simulations confirmed that the design algorithms would work as intended when used in a range of real-life situations of practical interest.

The algorithms that were tested successfully implemented, among other things, routing methods as recited in all of claims 1-20.

The successful testing of the algorithms is corroborated by Exhibit A of the Certification, which is a portion of a Lucent Technologies internal technical memorandum.

Accordingly, Applicants respectfully submit that they have demonstrated that they had actually reduced their invention to practice prior to the effective date of the article by Baworntummarat. Therefore, Baworntummarat is not effective as a reference against the instant application, and the instant application is patentable thereover under the standards of 35 USC 102(a) and 103(a).

Novel Features

Applicants further submit that claims 8-12 include features that are neither anticipated by nor obvious over Baworntummarat. Therefore, it is submitted that these claims in particular are patentable over Baworntummarat irrespective of whether Applicants have succeeded in proving a date of invention prior to the effective date of the Baworntummarat article and succeeded in removing Baworntummarat as a reference.

Specifically, claim 8, and claims 9-12 as depending therefrom, contains the limitations that the making of path and wavelength-channel assignments is sensitive to a cost function, and the cost function depends on link occupancy by wavelength channels.

Thus, links having different levels of occupancy make different contributions to the cost function.

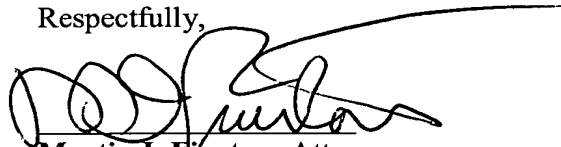
These features are neither taught nor suggested by Baworntummarat. Instead, Baworntummarat teaches (see Id., page 888, column 1, in Step 4 under the heading, "A. Path Accommodation Design and the Wavelength Assignment Algorithms") to obtain a network cost by first doing all the routing, then counting all the fibers installed on all the links, and then adding up all the fiber costs. Importantly, the "cost" in this approach is an overall network cost that can be evaluated only after routing the demands. There is no suggestion that such a cost should explicitly include different contributions from different links depending on their respective occupancy levels.

Accordingly, it is respectfully submitted that at least claims 8-12 are patentable over Baworntummarat under the standards of 35 USC 102(a) and 103(a).

Conclusion

All points of rejection having been responded to, Applicants respectfully solicit allowance of all claims now pending in the application.

Respectfully,



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Attachments

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Docket Administrator (Room 3J-219)

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